Module 8 Overview

Introduction

This module introduces the generalization of teh Gaussian Processes for regression. In particular, we will derive the

formulation that leads to kernel versions of Gaussian Processes, and we will see the algorithms to optimize the parameters of the kernels and the noise parameter of the data likelihood. Also, we will give an interpretation of the kernel matrix as a covariance matrix.

Students are encouraged to review the supplementary slides where the GP for classification is summarized.

Learning Objectives

By completing the activities for this module, students will be able to:

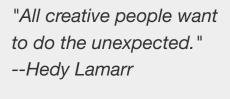
- Provide a derivation and the construction of a kernel Gaussian Process.
- Optimize the noise parameter sigma subscript n superscript 2 of the likelihood function.
- Optimize the parameters of the kernel using maximum likelihood.
- Construct a kernel GP for regression and discuss their results.

Required Instructional Materials

• The required materials are the slides and the problem statements for the assessments. Students are encouraged to use book <u>Gaussian Processes for Machine Learning</u>, C. Rasmussen et al. This book has free access online.

Activities

Students are required to follow the slides and to turn in two assessments. Also, students are
encouraged to use the discussion board to post questions or answer questions posted by other
students.





Austrian-American actress and inventor.

Developed and patented the Frequency
Hopping radio communication method in
use today.

Module 8 Summary

- Slides and homework
- Weekly Discussion

If you have questions about some aspect of Learn, **UNM LEARN Support** is available to troubleshoot technical problems.

Contact them 24/7 at 505-277-0857, 1-877-688-8817 or use the "Create a Support Ticket" link on the left Course Menu.